REMARKS/ARGUMENT

Regarding the Amendments to the Specification:

Pages 2- 4 of the specification have been amended to reflect the agreement reached with the Examiner during a telephone interview as discussed below. These amendments introduce no new matter.

Regarding the Claims in General:

Claims 2-4, 10, and 11 are now pending. Claims 10 and 11 have been amended to address the outstanding rejections, and claim 4 has been amended to place it in independent form to address the outstanding objection.

The scope of the amended claims has not, however, been narrowed.

Regarding the Personal Interview Held September 21, 2004:

Applicants' representative gratefully acknowledges the courtesy and assistance afforded to him by Examiner Heitbrink in a telephone interview held on September 21, 2004. During the interview, applicant's representative pointed out that he continued to regard the term "aperture" as unambiguously connoting an open passage, i.e., one through which something can pass to some other location. In contrast, a "recess" or "cavity" is a closed space with an opening at one location allowing entry or egress. Stated differently, the structure defining a recess or cavity could have an aperture therein allowing access, but the recess or cavity itself would not be an aperture.

The Examiner's response was essentially that under the broad interpretation required for proper examination, the term "aperture" legitimately reads on a recess or cavity.

Applicants' representative proposed to resolve this impasse by amending claims 10 and 11 to replace the word "aperture" with the phrase - - open passage - - , and the Examiner agreed that this distinguishes over a recess or cavity. Claims 10 and 11 have been amended accordingly.

Further, in response to the Examiner's suggestion, the specification has been amended to add the words "open passage" in conjunction with the references to the "aperture". It is understood that,

subject to final review, the amendments render claims 10 and 11 allowable over the prior art of record.

Regarding The Allowable Subject Matter:

Applicants note with appreciation the indication that claim 4 would be allowed if rewritten in independent form incorporating the limitations of their respective parent claims. This has now been done.

Regarding the Prior Art Rejections:

Applicants respectfully request reconsideration of the rejection of claims 2, 3, 10, and 11 as amended herein.

Taking into account the Examiner's agreement that "an open passage" is not the same as a cavity or recess, it is respectfully submitted that claims 10 and 11 as amended are patentable over the prior art of record. Both claims specify that one of the mold halves includes an open passage extending therethrough and call for "a contact member . . . positioned in the open passage . . ."

None of the seven references applied to the claims teaches or suggests a mold in which one of the mold halves includes an *open passage extending therethrough* with a member positioned therein, which member is "so shaped and positioned that it is in contact with a surface of a semiconductor chip being encapsulated in the mold", (claim 10), or "so profiled as to minimize seepage of molding material onto the portion of the surface of the semiconductor chip during molding" (claim 11).

In each reference applied, except for Steijer, what the examiner calls the contact member is in a recess or cavity, not in an aperture or open passage through one of the mold sections. Steijer, however, is distinguishable for other reasons as indicated below.

Also, except in the case of Tetreault, the contact portion (which is not in an aperture in any event), does not touch the chip itself, but instead touches a lead frame or some other carrier.

The following specific differences exist between the rejected claims and the seven references:

Shimizu (applied against claims 2, 3, 10, 11): Element 13 is a mold cavity block, and element 20 is a lead frame, not a chip. Mold insert 13 is in a cavity or recess, not an open

passage, and it is in contact with the lead frame. It does not contact the chip, and is not profiled to prevent seepage of molding material onto the chip.

Schmid (applied against claim 11): Elements 34, 64b are mold inserts, and element 106 is the wafer. No part of either insert is in contact with wafer 106, and they are not profiled to prevent seepage of molding material onto the chip. Also, the inserts are in recesses, not in open passages.

Baird (applied against claim 11): What examiner refers to as contact sections 12, 13 are the actual cavity plates which define the mold cavities. These are located in recesses or cavities, not open passages. The semiconductor device 14 of Fig. 1 includes a diode 18 soldered to heat sinks 16 and 17. Cavity plates 12 and 13 touch heat sinks 16 and 17, and not diode 18, and are not profiled to prevent seepage of molding material onto the chip (diode).

Nishihara et al. (applied against claim 11): Plate 24 contacts a substrate 2, not chip 3, and is not profiled to prevent seepage of molding material onto the chip.

Tetreault (applied against claims 2, 3, 10, 11): Figs. 5 and 7 show a mold insert 26 which contacts semiconductor device 46. However, this is in a recess or cavity, not in an open passage.

Peters et al. (applied against claims 2. 3. 10, 11): What the examiner calls a semiconductor chip is actually a carrier 4 on which a chip is arranged for molding (see col. 2, lines 61-62), not a chip per se. What the examiner calls a contact member is actually a compensation element in the form of a spring ring 11 which holds carrier 4 in place by pressing it against the peripheral edge 12 of upper mold part 3 (see Col. 3, lines 3-9). It is not in contact with the chip. Also, the compensation member is in a recess or cavity, not an open passage, and is not profiled to prevent seepage of molding material onto the chip.

Steijer et al. (applied against claim 11): What the examiner calls a silicon wafer is an optocomponent 5 which is comprised of a substrate plate on which passive or preferably active components (not shown) are mounted. What the examiner calls contact members are guide pins 7 which fit into grooves in the substrate plate (see col. 5, lines 51-63). The guide pins are not in contact with the circuit devices themselves, and are not profiled to minimize seepage of molding compound onto parts of the circuit devices.

It is respectfully submitted that claims 10 and 11 clearly distinguish over the prior art of record for the reasons stated above, and therefore should be allowed, along with dependent claims 2 and 3. Since claim 4, which has been indicated to define allowable subject matter, has now been placed in independent form, and non-elected claims 7-9 have been canceled, it is believed that this amendment places the application in condition for allowance. However, if there remain any unresolved issues, the Examiner is respectfully requested to contact applicants' representative by telephone.

I hereby certify that this correspondence is being deposited with the United States Postal Service as transmitted by Facsimile to (703) 872-9306 addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.

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Name of applicant, assignee or Registered Representative

Signature

September 28, 2004
Date of Signature

Respectfully submitted,

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